US EPA RECORDS CENTER REGION 5
522908

First-Year Requirements

Under RCRA, three distincts groups of analyses are conducted on groundwater samples. The actual constituents are listed in the table "Groundwater Analytical Requirements". The following is a summation of the intent of each group:

GROUP I - characterizes the suitability of the groundwater as a drinking water source and analyzed only during the first year; if the maximum contaminant level (MCL) is exceeded, it must be reported to EPA.

GROUP II - these constituents establish the groundwater quality; used as a basis for comparison if GWQAP is conducted.

GROUP III - these are the indicators of groundwater contamination; four replicate measurements must be made for each constituent on each sample.

The following items are the requirements for the first year of groundwater monitoring, for those wells installed by 19 November 1981:

(1) The initial background concentrations for each parameter in GROUPS I, II, III must be determined quarterly for all monitoring wells.

(2) Determine IBAM for each indicator parameter (SEE BELOW)

(3) Water level background data obtained

TABLE 3

GROUNDWATER ANALYTICAL REQUIREMENTS

GROUP	Chemical Constituent	M.C.L.*	Minimum Sampling Frequency During First Year	Minimum Sampling Frequency After First Year	EPA Method No. (1)
	Arsenic	0.05 mg/l			206.3
	Barium	1.0 mg/l	Q		208.1
	Cadmium	0.01 mg/l			213.1
	Chromium	0.05 mg/l	U		218.4
	Fluoride	1.4-2.4 mg/l			240.2
	Lead	0.05 mg/l	A		239.1
	Mercury	0.002 mg/l			245.1
	Nitrate(N)	10.0 mg/l	R		352.1
	Selenium	0.01 mg/l			270.3
I.*	Silver	0.05 mg/l	T		272.1
	Endrin	0.0002 mg/l			)
	Lindane	0.004 mg/l	E		)
	Methoxychlor	0.10 mg/l			)-608
	Toxaphene	0.005 mg/l	R		)
	2,4-D	0.1 mg/l			)
	2,4,5-TP Silvex	0.01 mg/l	L		)
	Radium 226+228	5 pCi/l			705 (2)
	Gross Alpha	15 pCi/l	Y		703 (2)
	Gross Beta	50 pCi/l			703 (2)
	Turbidity	1/STU			180.1
	Coliform Bacteria	<1/100 ml			909 (2)
			Q	A	
	Chloride		U	N	325.3
	Iron		A	N	236.1
	Manganese		R	U	243.1
II.**	Phenols		T	A	420.1
	Sodium		E	L	273.1
	Sulfate		R	L	375.4
			L	Y	
			Y		
			Q	S	
			U	E	
***	pH		A	M	150.1
III.	Specific Conductance		R	I	120.1
	Total Organic Carbon		T	-	415.1
	Total Organic Halogen		E	A	(3)
			R	N	
			L	N.	
			Y		

* Maximum contaminant level

** Results used for required determinations of Groundwater Quality Assessment Program

*** Four replicate measurements of GROUP III parameters must be obtained for each sample taken from each well (except for downgradient wells during first year).

(1) Method for chemical analyses of water and wastes USEPA, March 1975

(2) Standard Methods for the Examination of Water & Wastewater APHA-AWWA-WPCF, 14th Edition, 1975

(3) Method 450.1 "Total Organic Halide", November, 1980, USEPA

TABLE B-1

U. S. STEEL CORPORATION - GARY WORKS
GROUND-WATER MONITORING PROGRAM

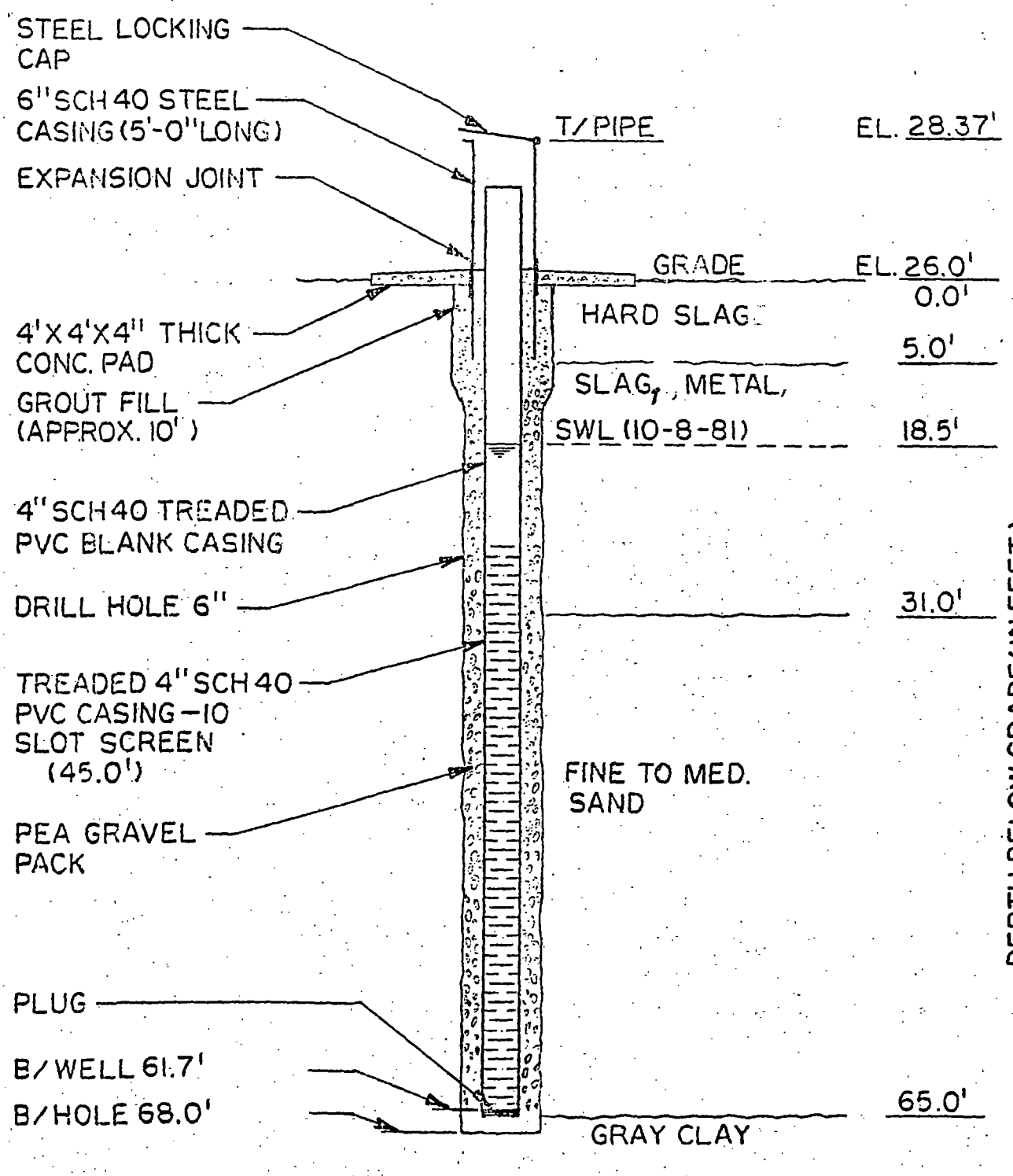
Anticipated Monitoring Well Evacuation and Recovery Time

Well Designation	Evacuation Time (Seconds)	Static Water Level Recovery Time (1) (Minutes)
HWD-2-01	60	25
HWD-2-02	70	35
HWD-2-03	75	15
HWD-2-04	40	30
HWD-5-01	50	45
HWD-5-03	60	35
HWD-5-03	INF	(2) 0
HWD-5-04	INF	(2) 0
HWT-2-01	35	50
HWT-2-02	75	15
HWT-2-03	70	65
HWT-2-04	75	35
HWT-2-05	70	45
HWT-2-06	40	45
HWT-2-07	55	35
HWT-13-01	70	55
HWT-13-02	55	60
HWT-13-03	60	25
HWT-13-04	65	65
HWT-14-01	125	20
HWT-14-02	45	40
HWT-14-03	340	25
HWT-14-04	70	70

(1) Static water level recovery to within 0.5 ft. of original level.

(2) Recovery rate equal to pump capacity. Pump capacity: 25-30 GPM (Red Jacket Pump, Model No. BCC, 18 GPM, 1 HP Motor)

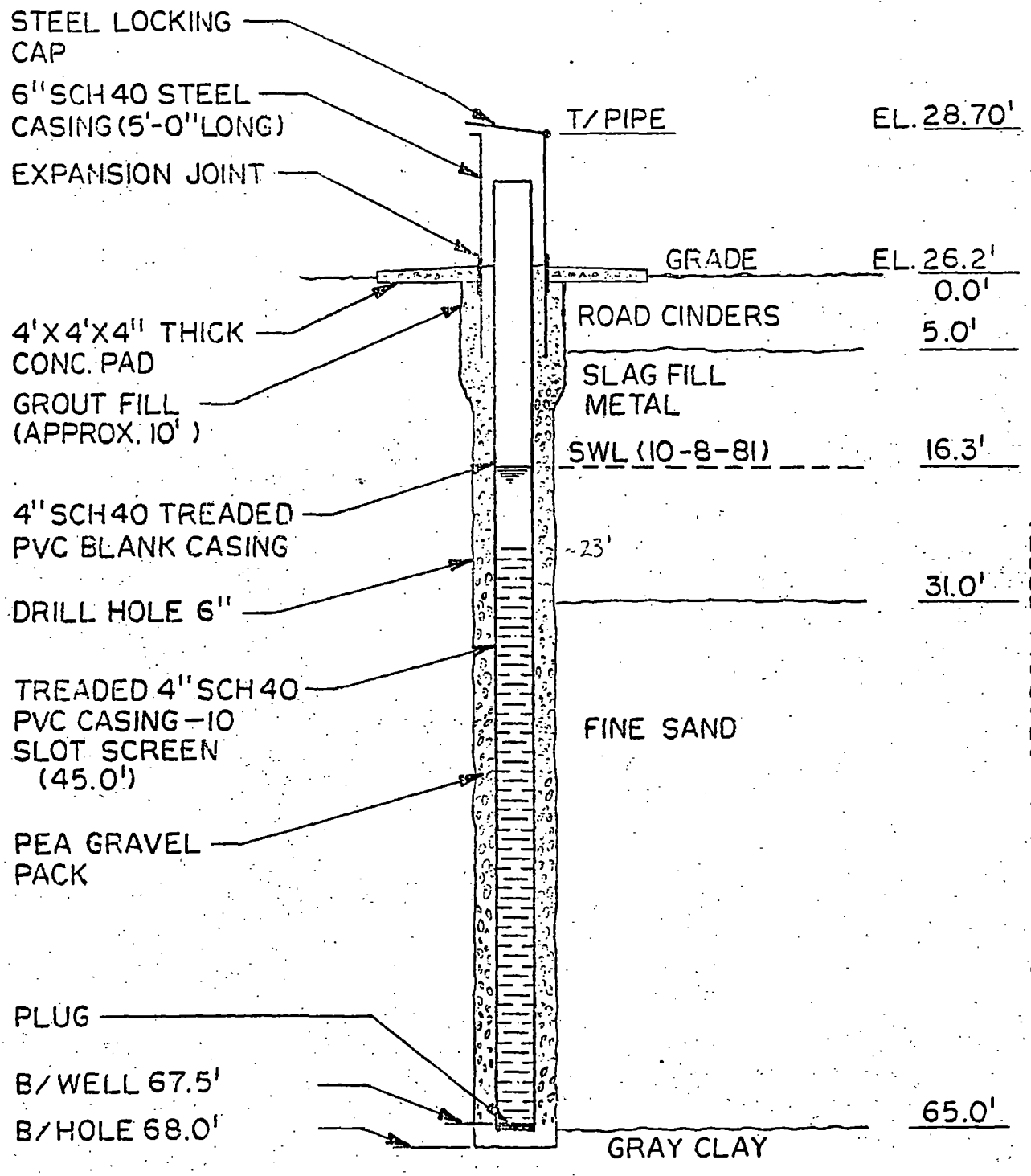
ES ENGINEERING - SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWT-2-03

℄ WELL COORDINATES: S-1131.66' W-6780.59'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 10-2-81

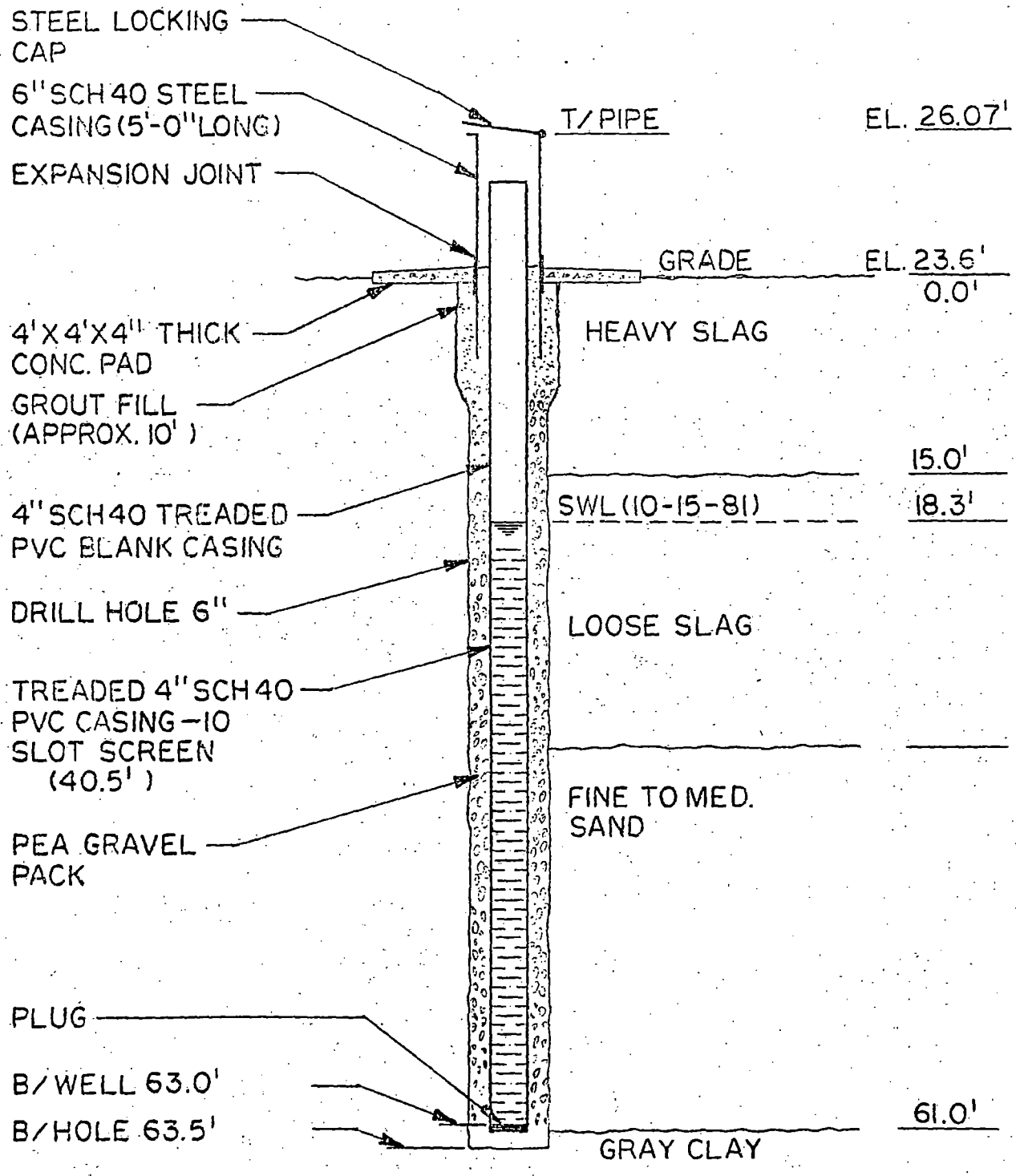
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWT-2-04

℄ WELL COORDINATES: S-1168.37' W-6425.11'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 10-5-04

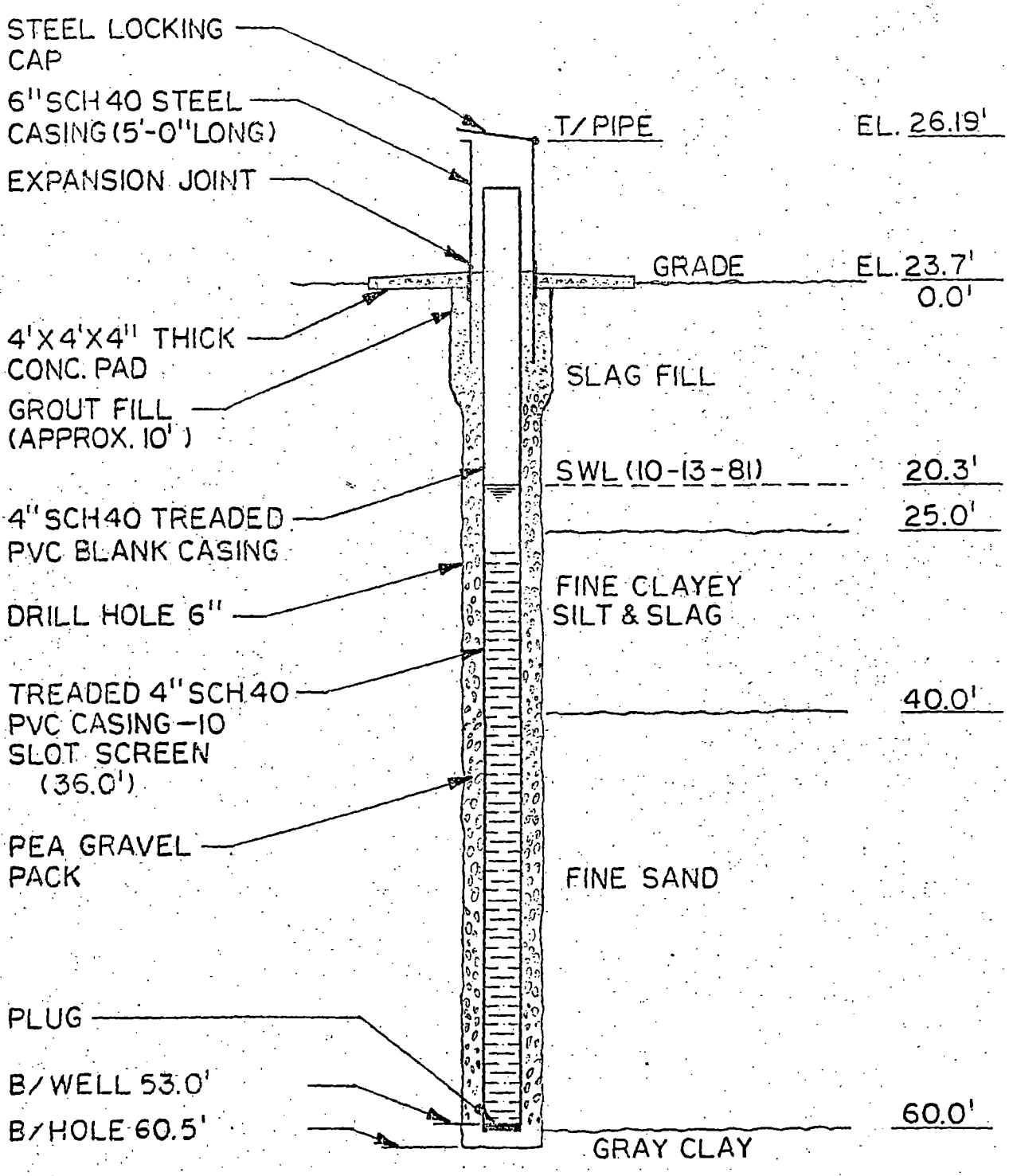
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWT-2-05

℄ WELL COORDINATES: S-962.67' W-6010.35'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 10-7-81

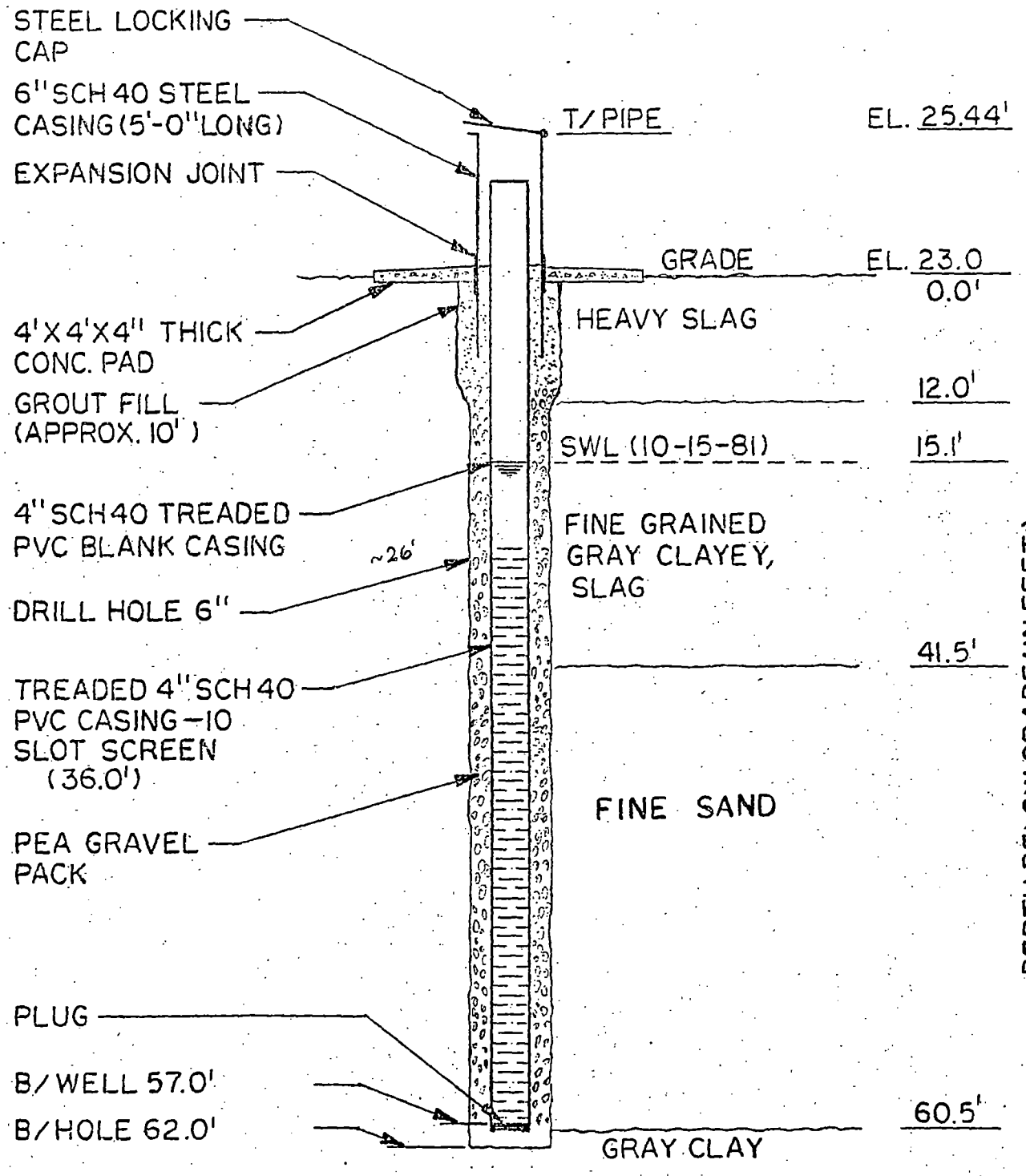
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWT-2-06

℄ WELL COORDINATES: S-915.16' W-5809.28'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 10-8-81

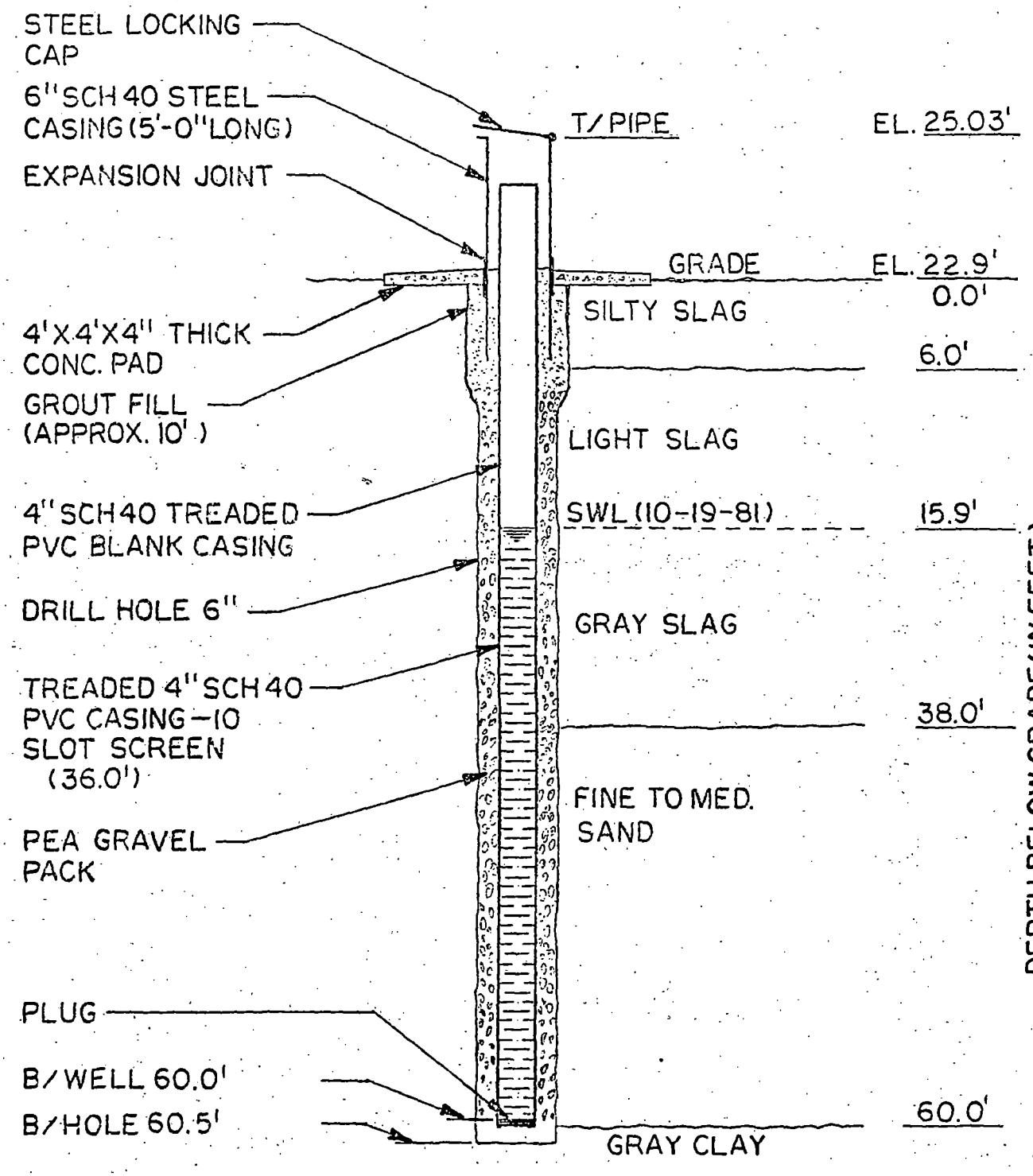
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWT-2-07

℄ WELL COORDINATES: S-1000.15' W-5634.17'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 10-9-81

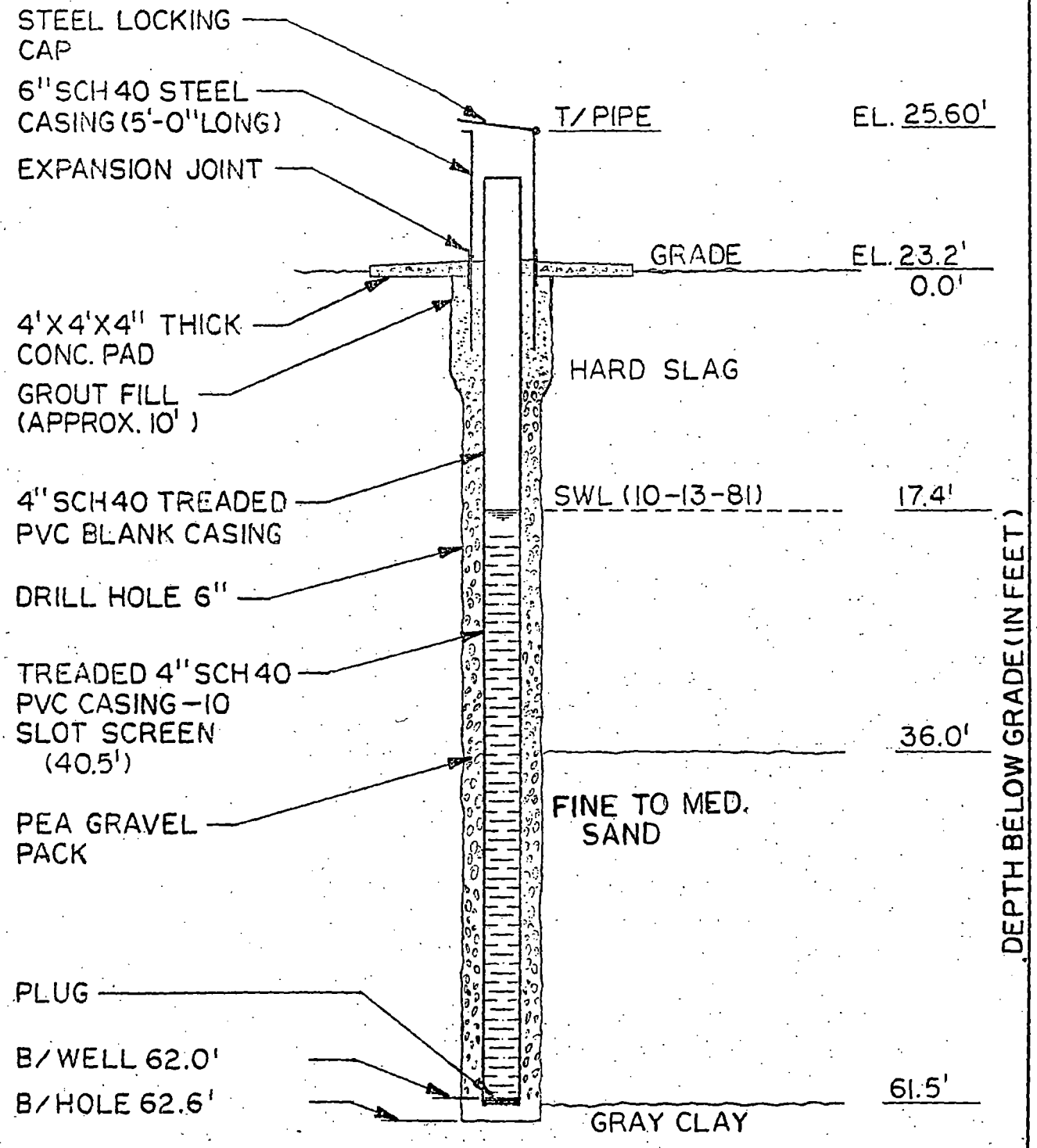
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWT-13-01

℄ WELL COORDINATES: S 1561.03' W -4750.40'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 10-19-81

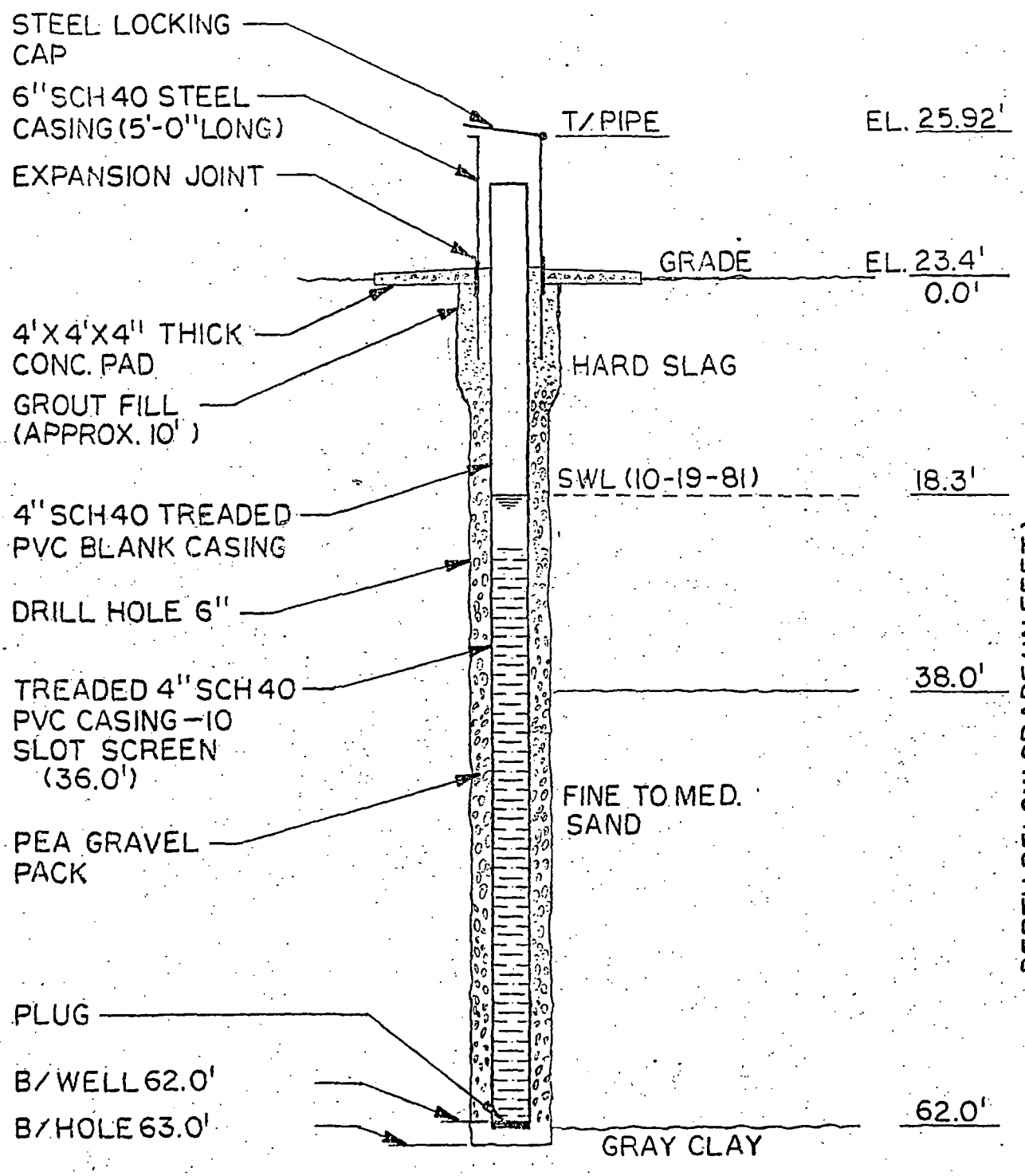
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWT-13-02

℄ WELL COORDINATES: S-1030.81' W-5103.15'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 10-12-81

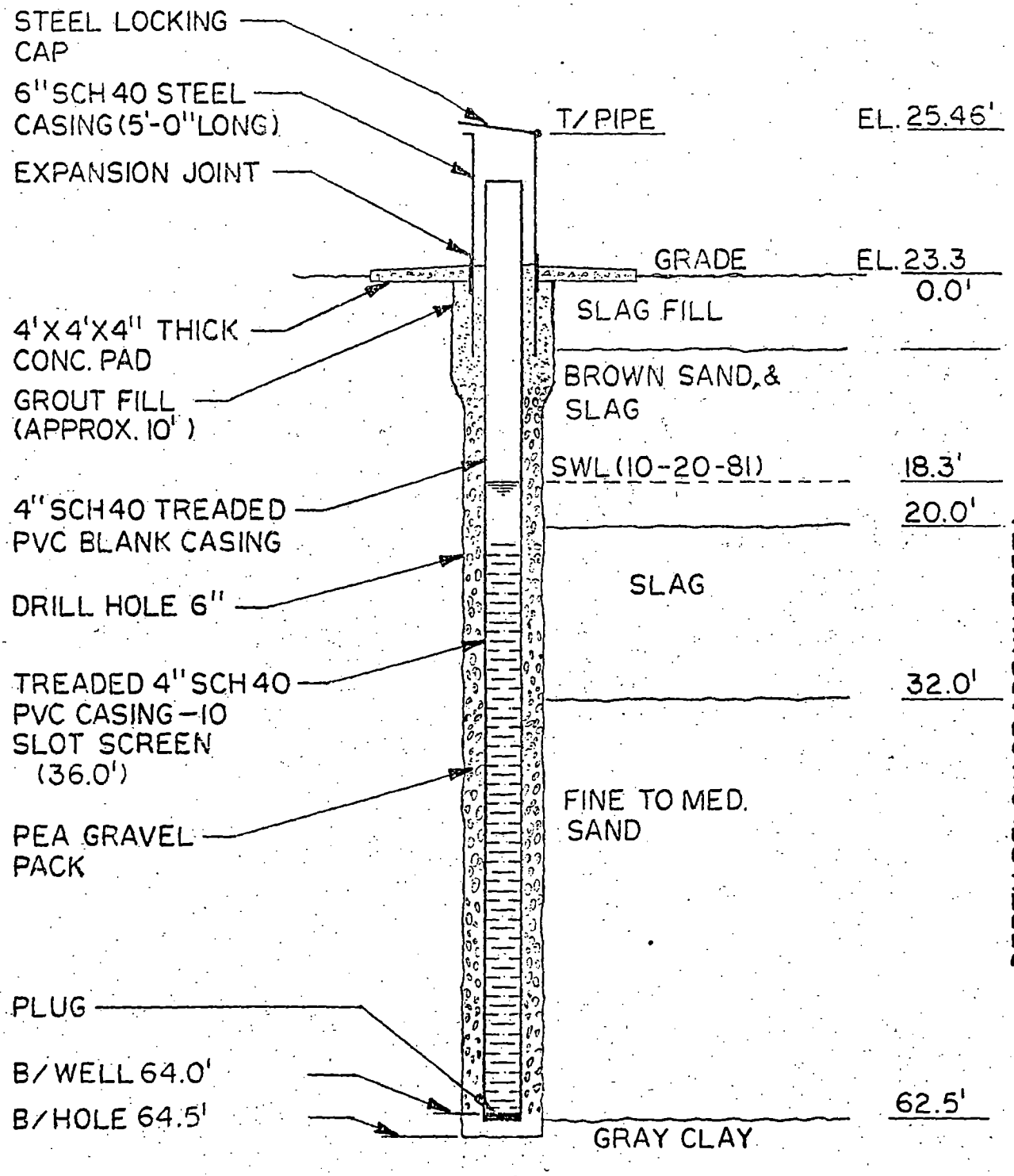
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWT-13-03

℄ WELL COORDINATES: S-968.28' W-4752.27'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 10-16-81

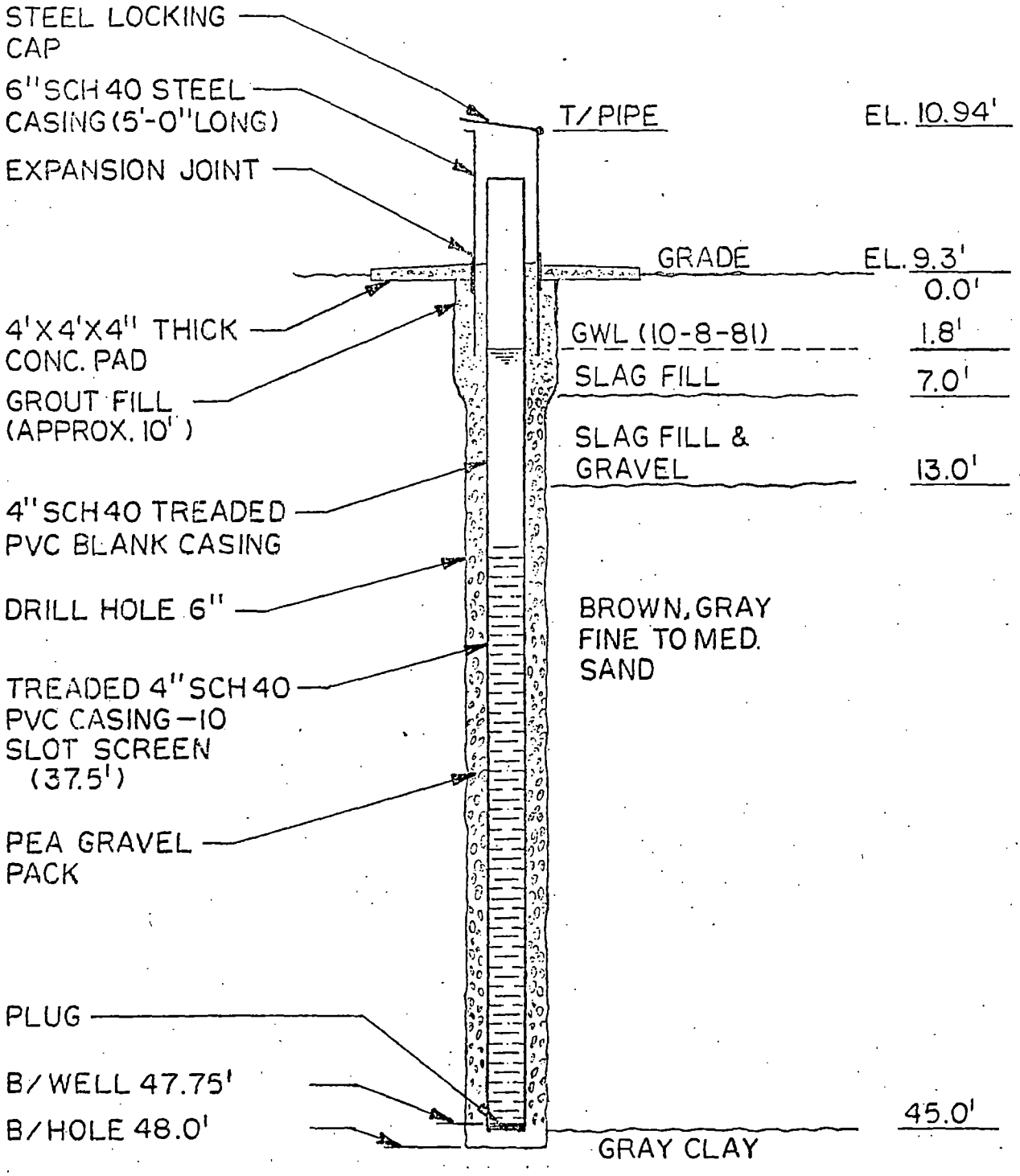
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWT-13-04

℄ WELL COORDINATES: S-965.58' W-4626.67'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 10-13-81

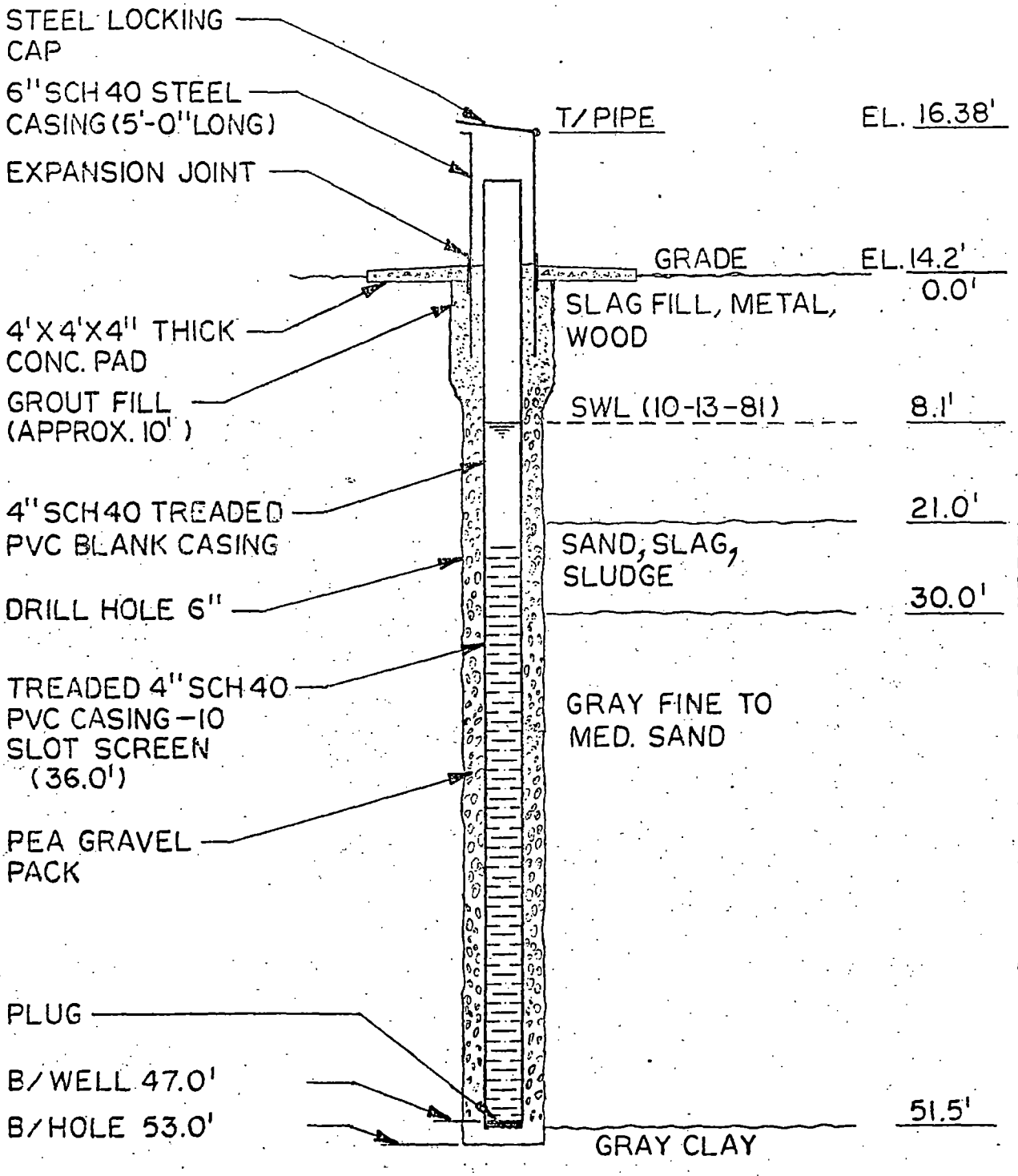
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWD-5-01

℄ WELL COORDINATES: S-2545.06' W-11879.76'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 9-28-81

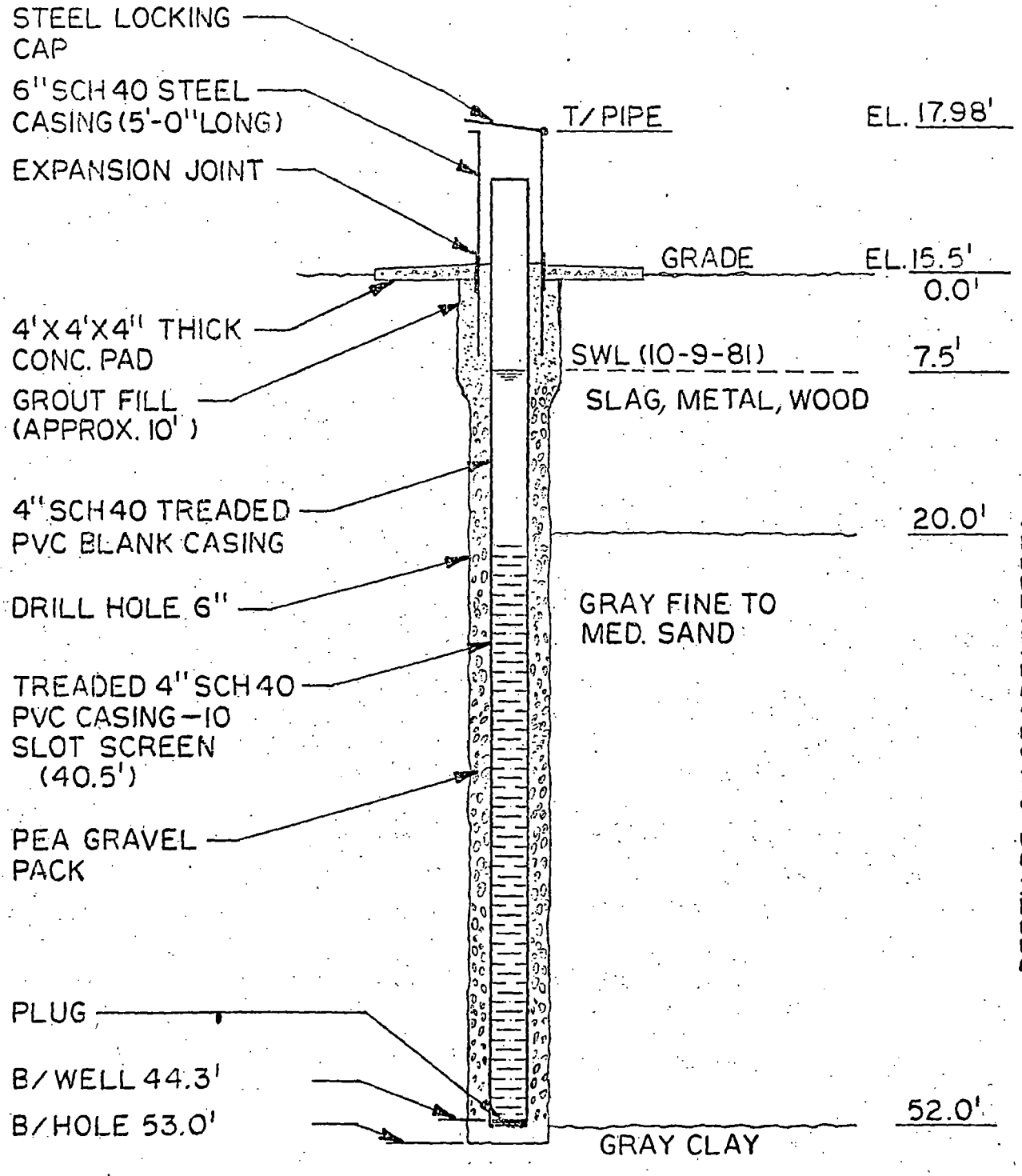
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWD-5-02

℄ WELL COORDINATES: S-2193.05' W-11207.57'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 9-29-81

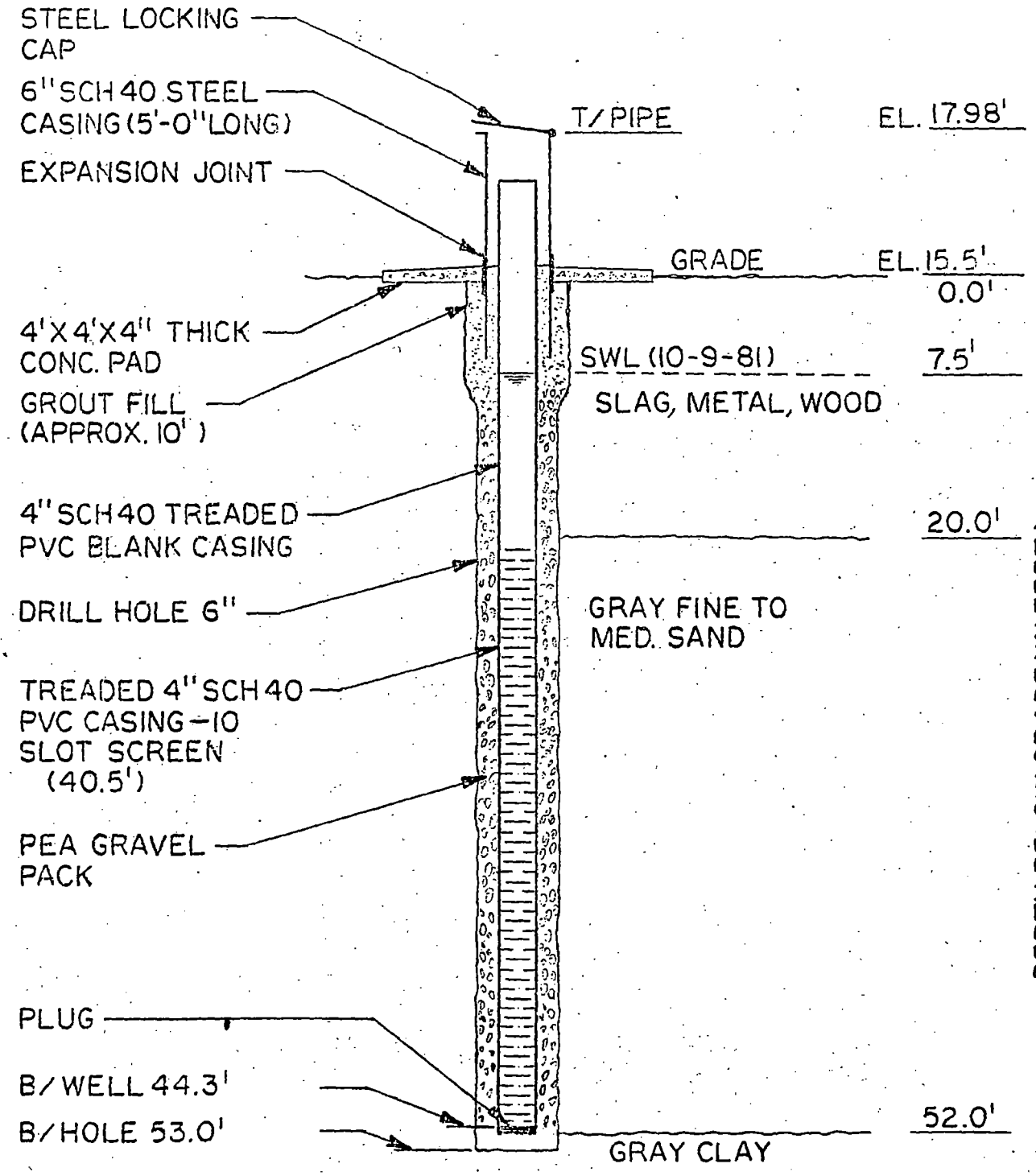
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWD-5-03

℄ WELL COORDINATES: S-2017.47' W-11441.32'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 9-30-81

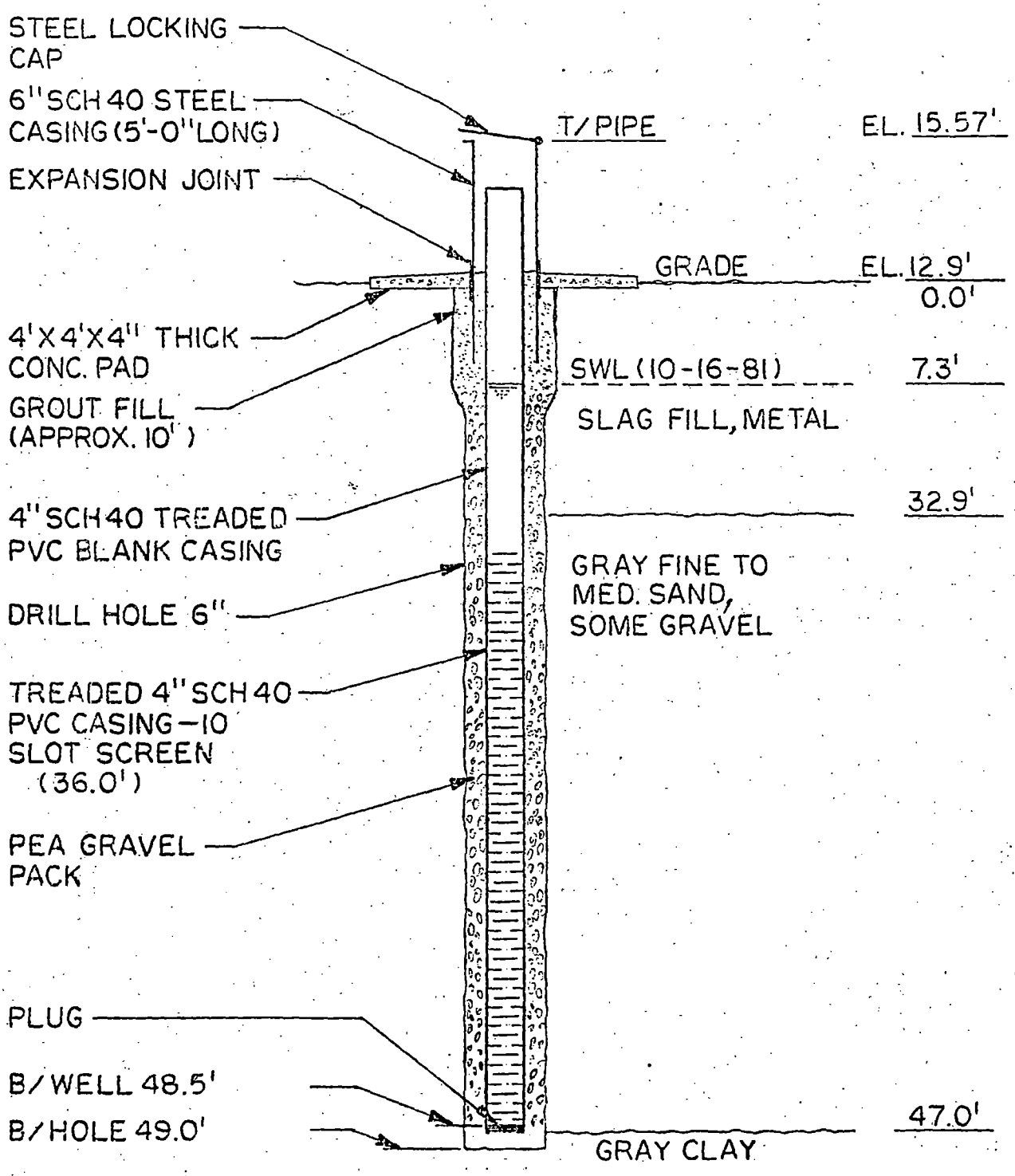
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWD-5-03

℄ WELL COORDINATES: S-2017.47' W-11441.32'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 9-30-81

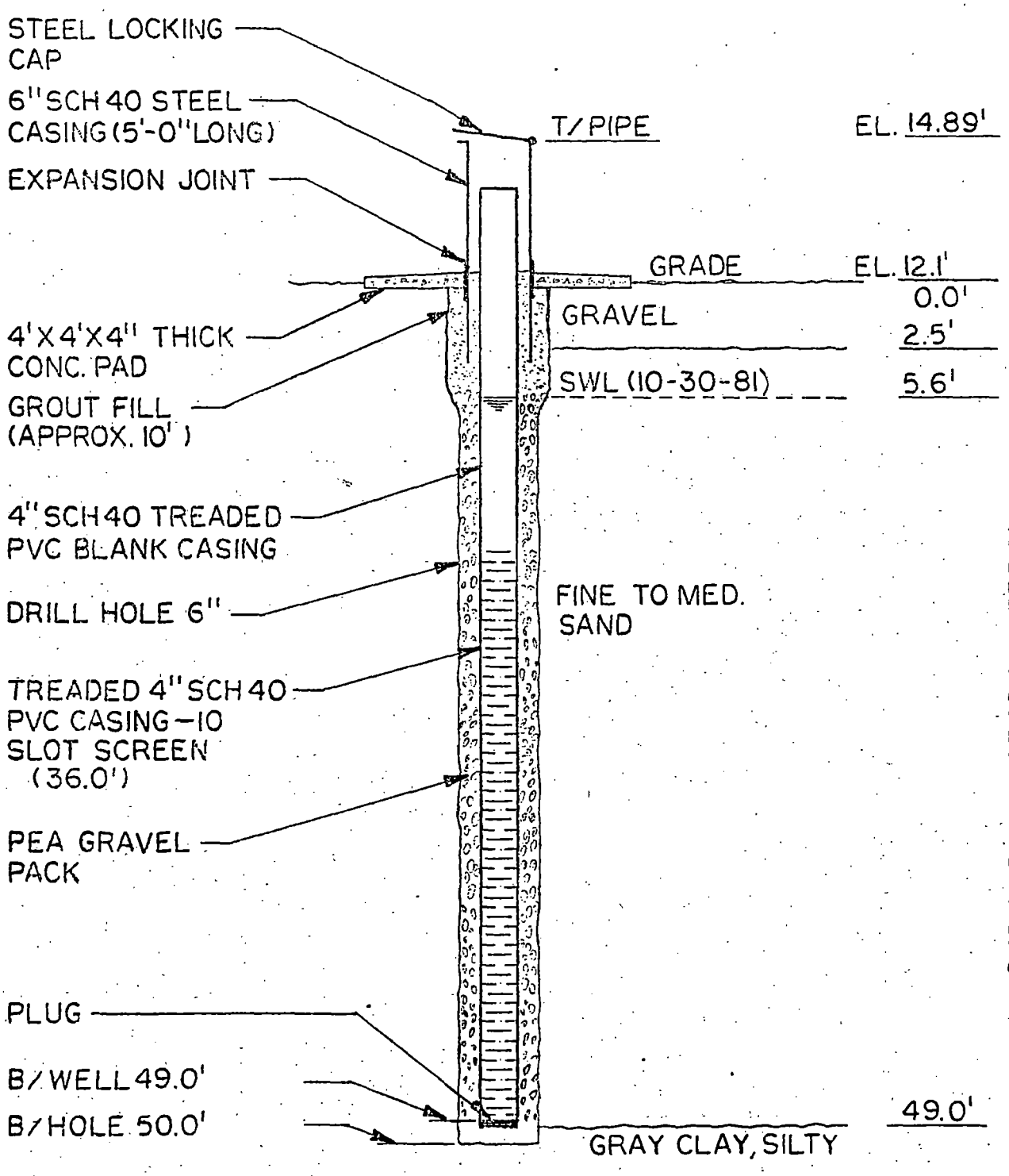
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWD-5-04

℄ WELL COORDINATES: S-1414.37' W-12533.40'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 10-12-81

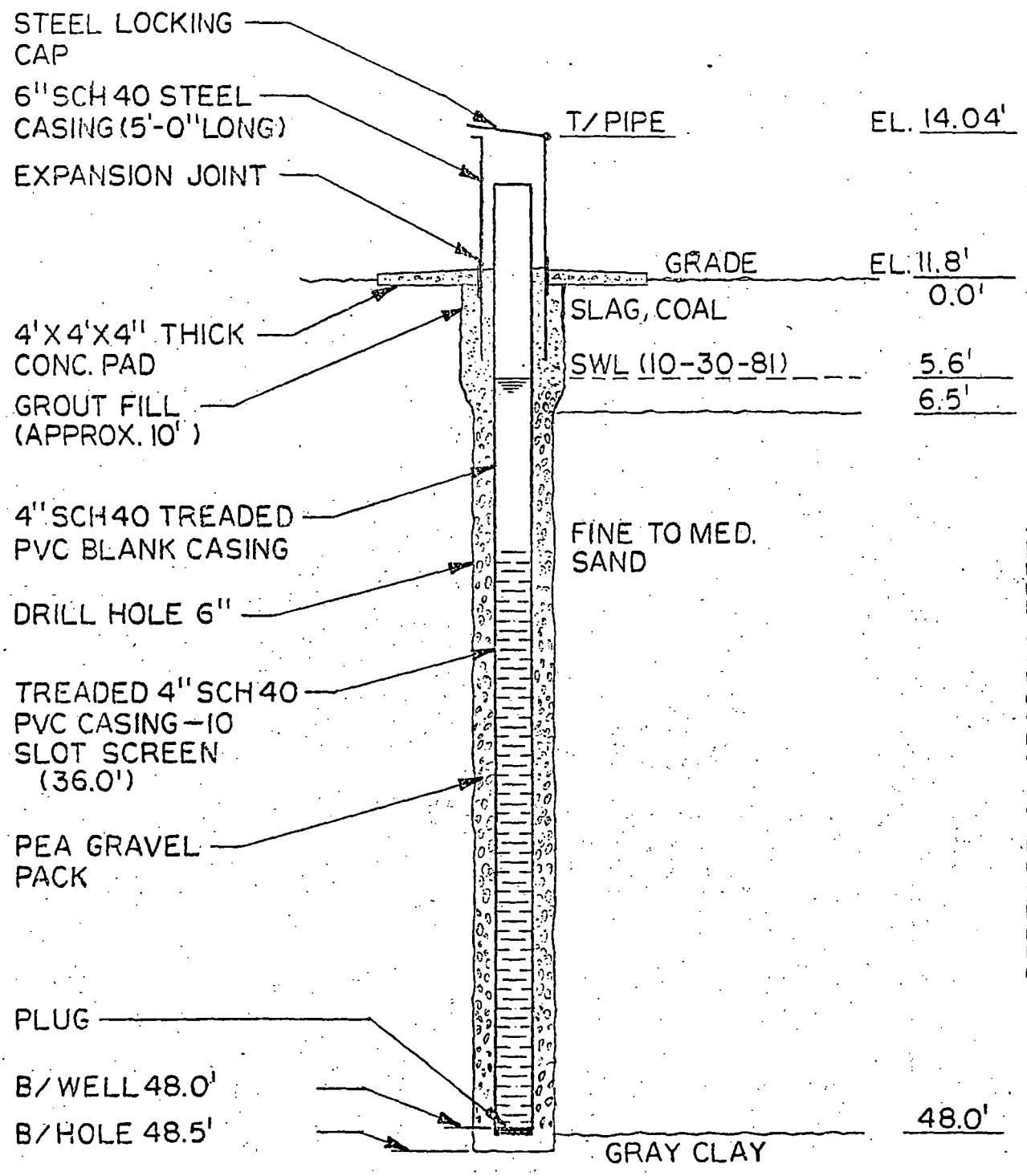
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWT-14-01

℄ WELL COORDINATES: S-3093.38' W-5442.33'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 10-19-81

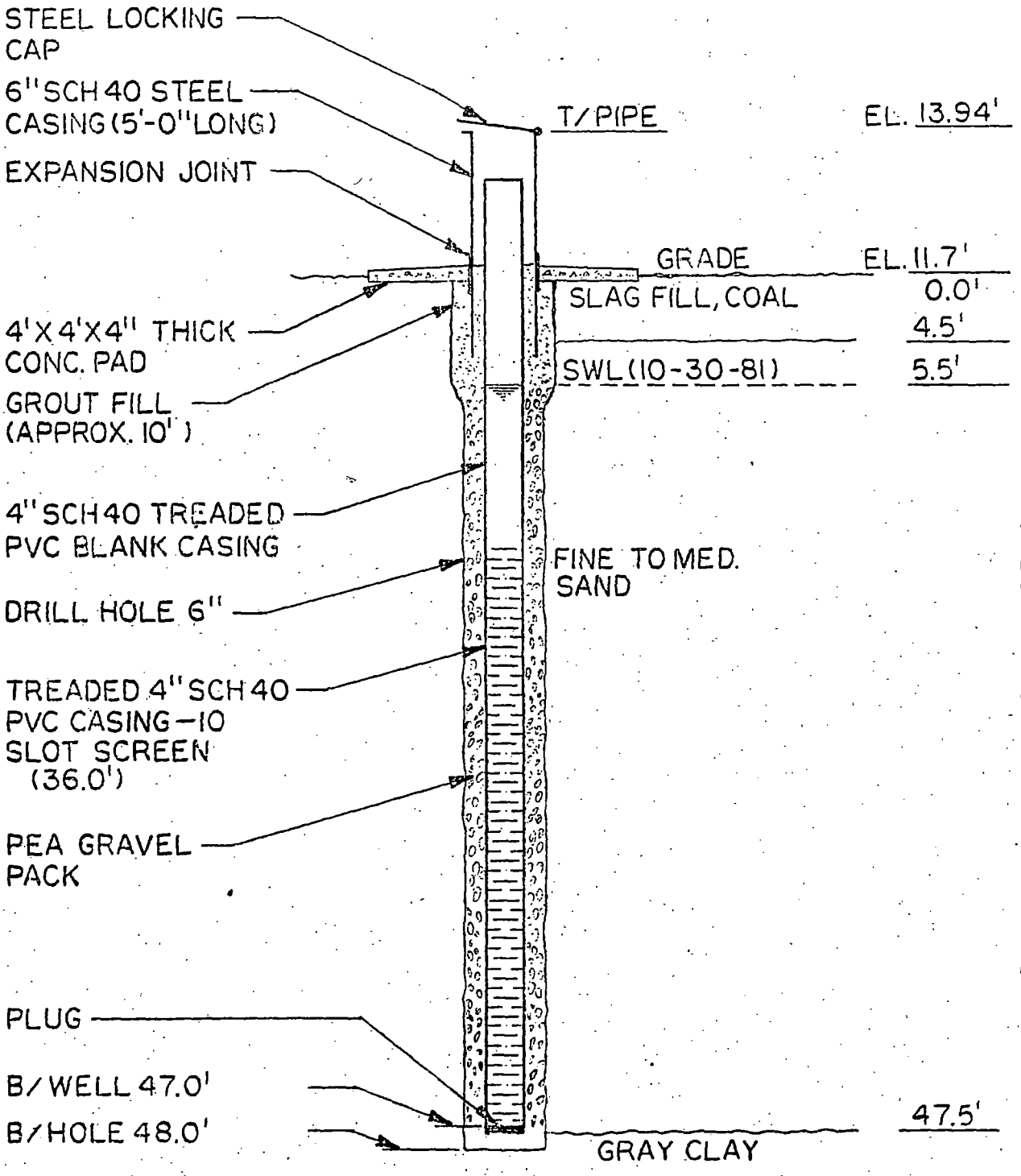
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWT-14-02

℄ WELL COORDINATES: S-2573.98' W-5541.35'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 10-20-81

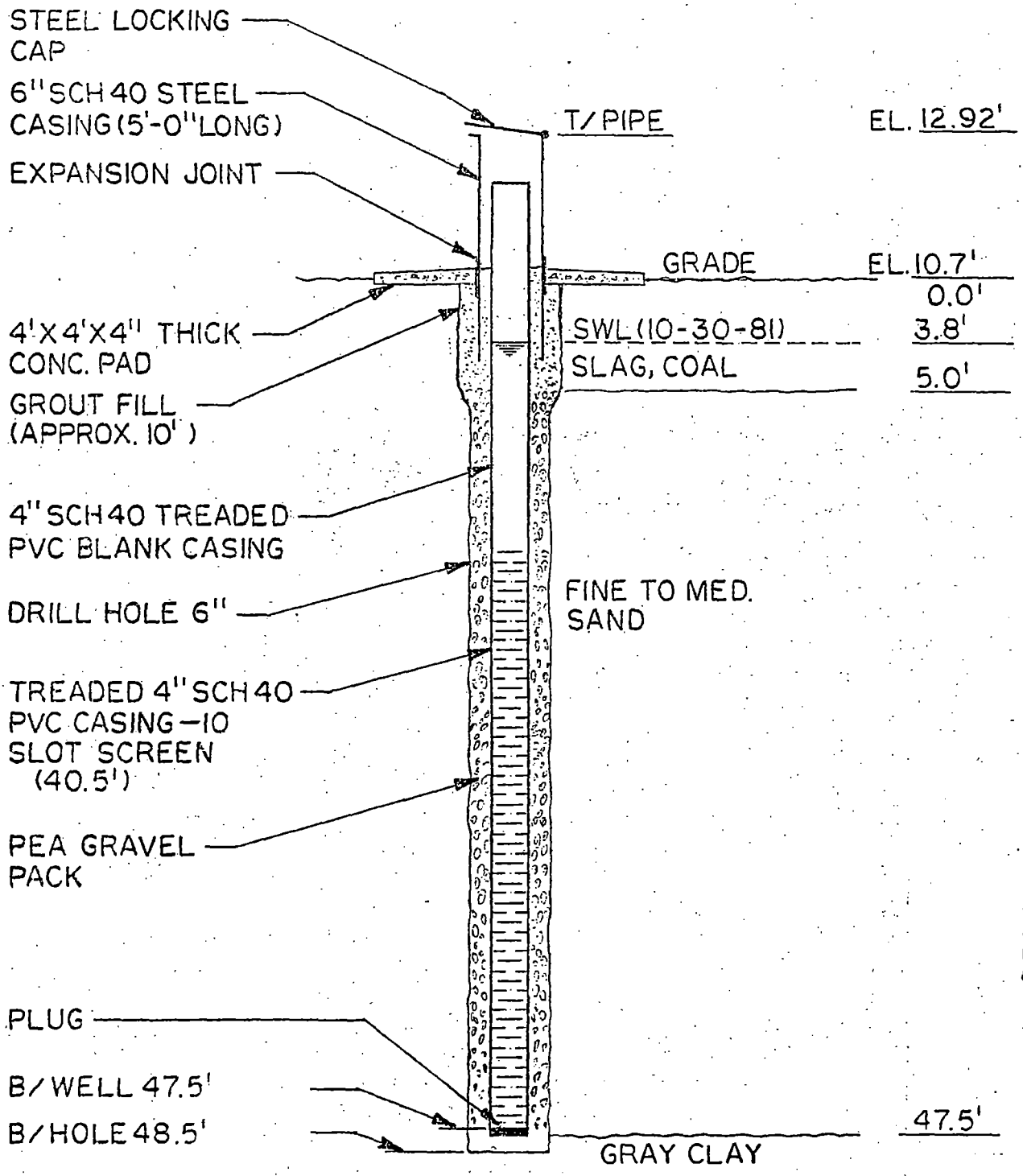
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWT-14-03

℄ WELL COORDINATES: S-2573.33' W-5394.76'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 10-21-81

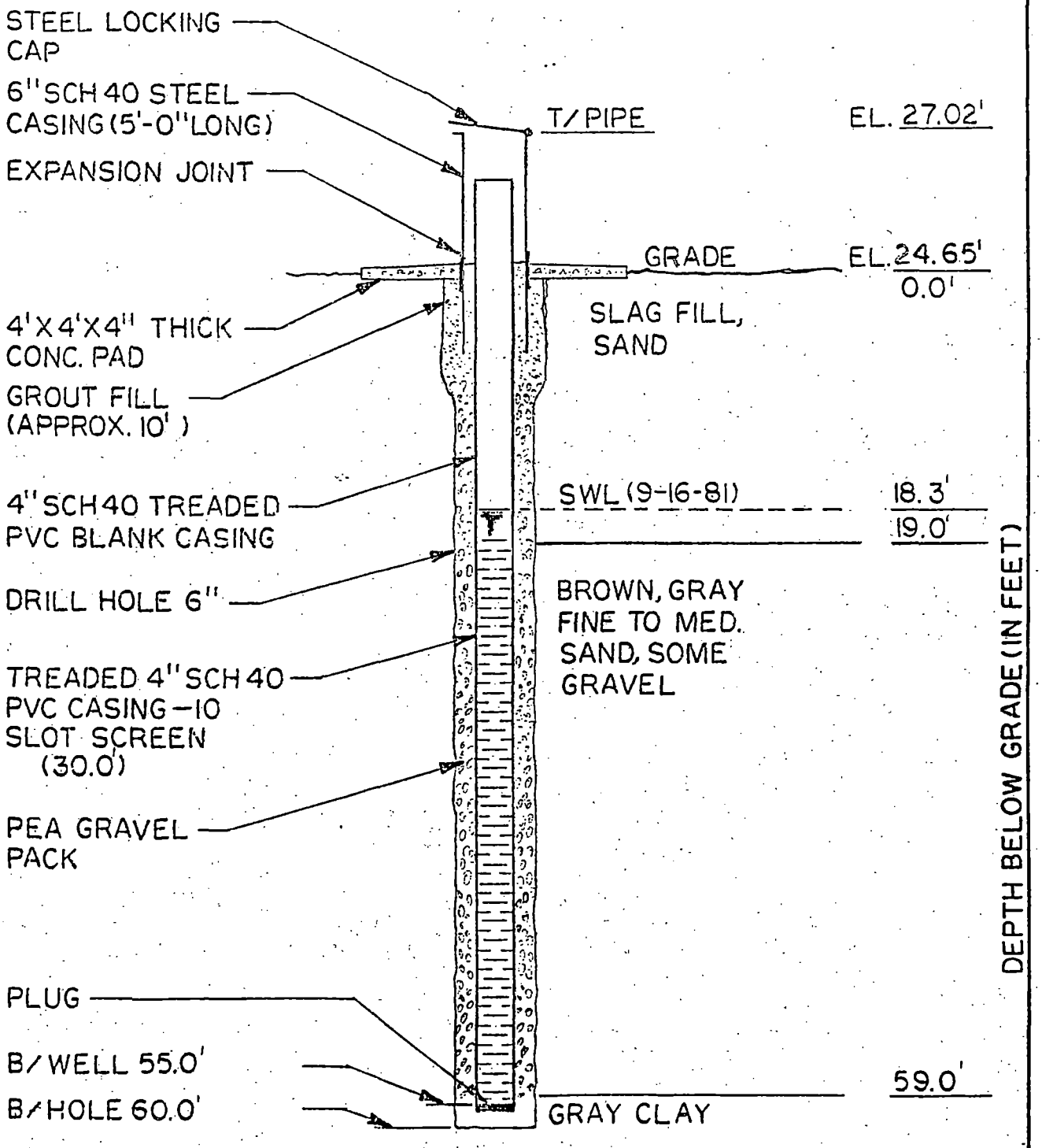
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWT-14-04

℄ WELL COORDINATES: S-2552.26' W-5217.35'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 10-21-81

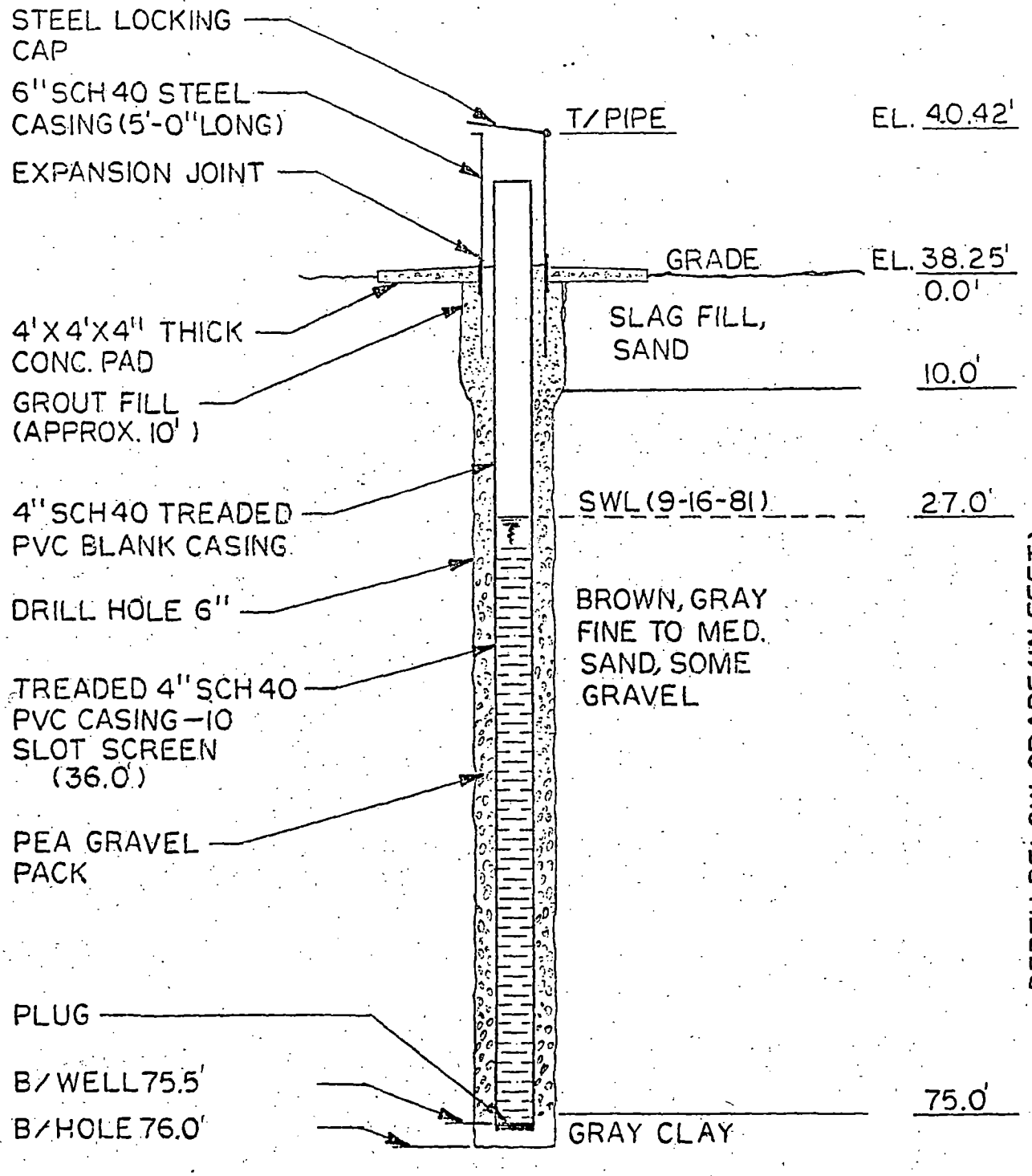
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWD-2-01

℄ WELL COORDINATES: S-1482.36' E-8296.59'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 9-16-81

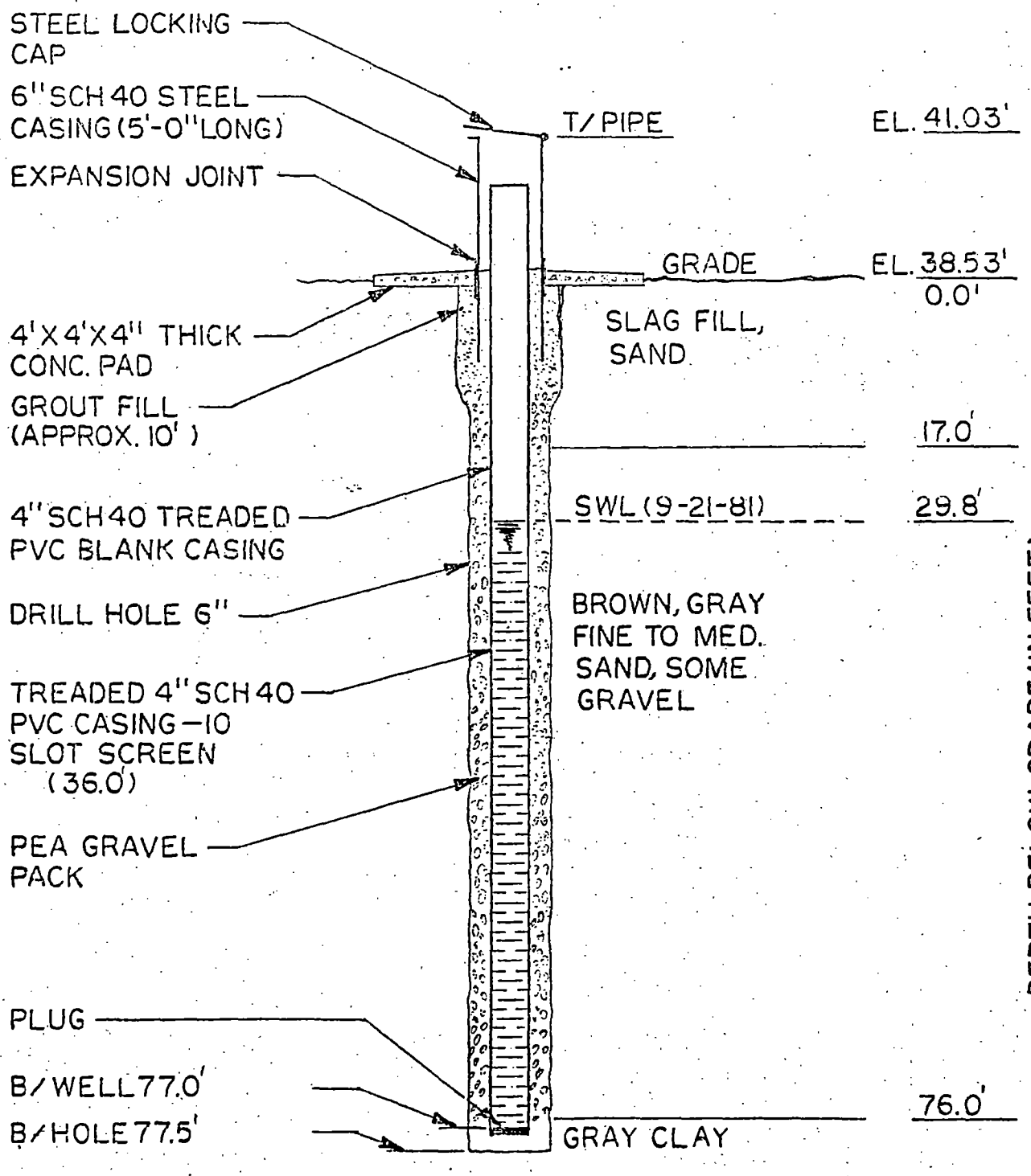
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWD-2-02

℄ WELL COORDINATES: S-1158.33' E-7790.88'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 9-23-81

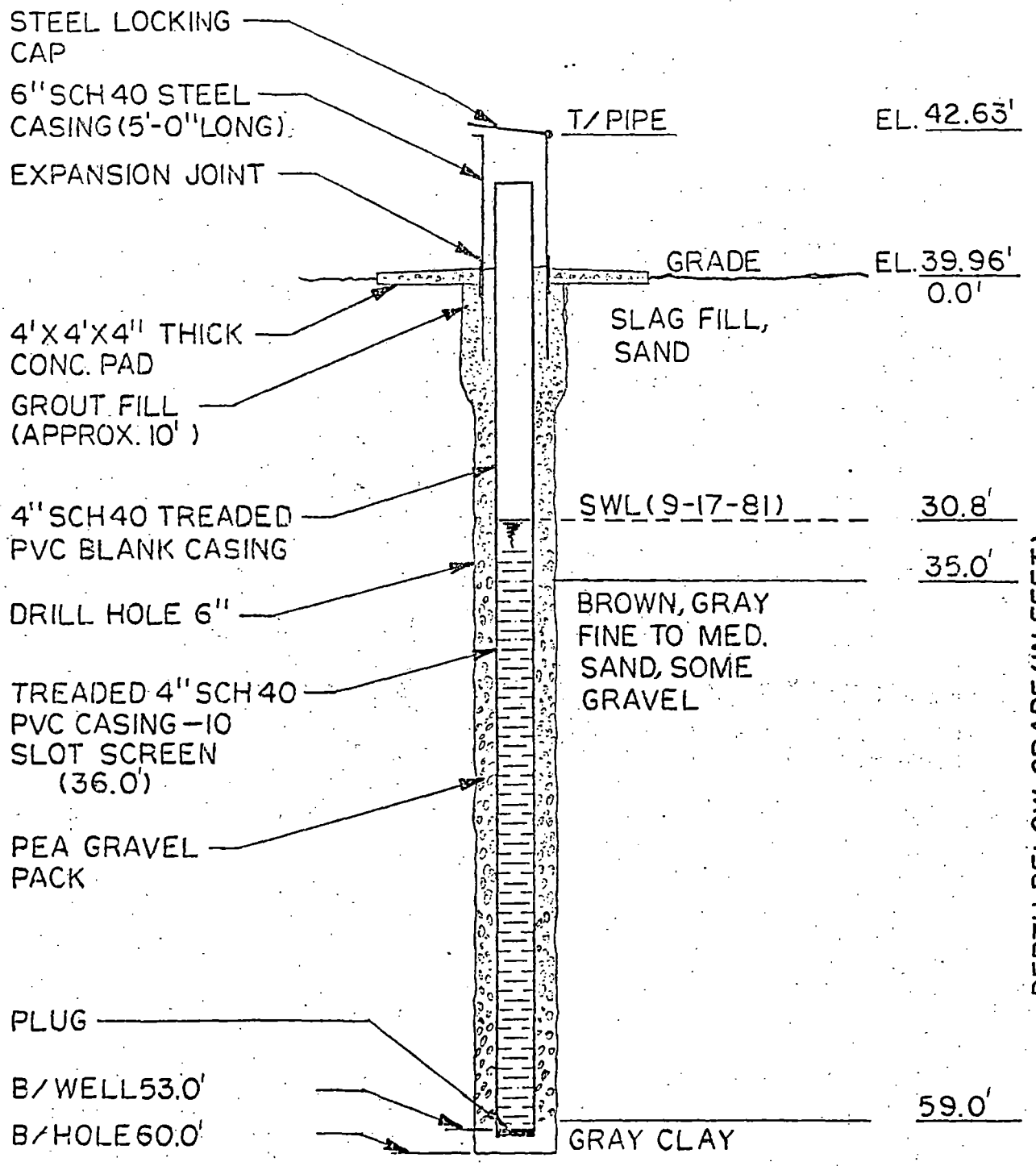
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWD-2-03

℄ WELL COORDINATES: S-1055.06' E-8061.30'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 9-21-81

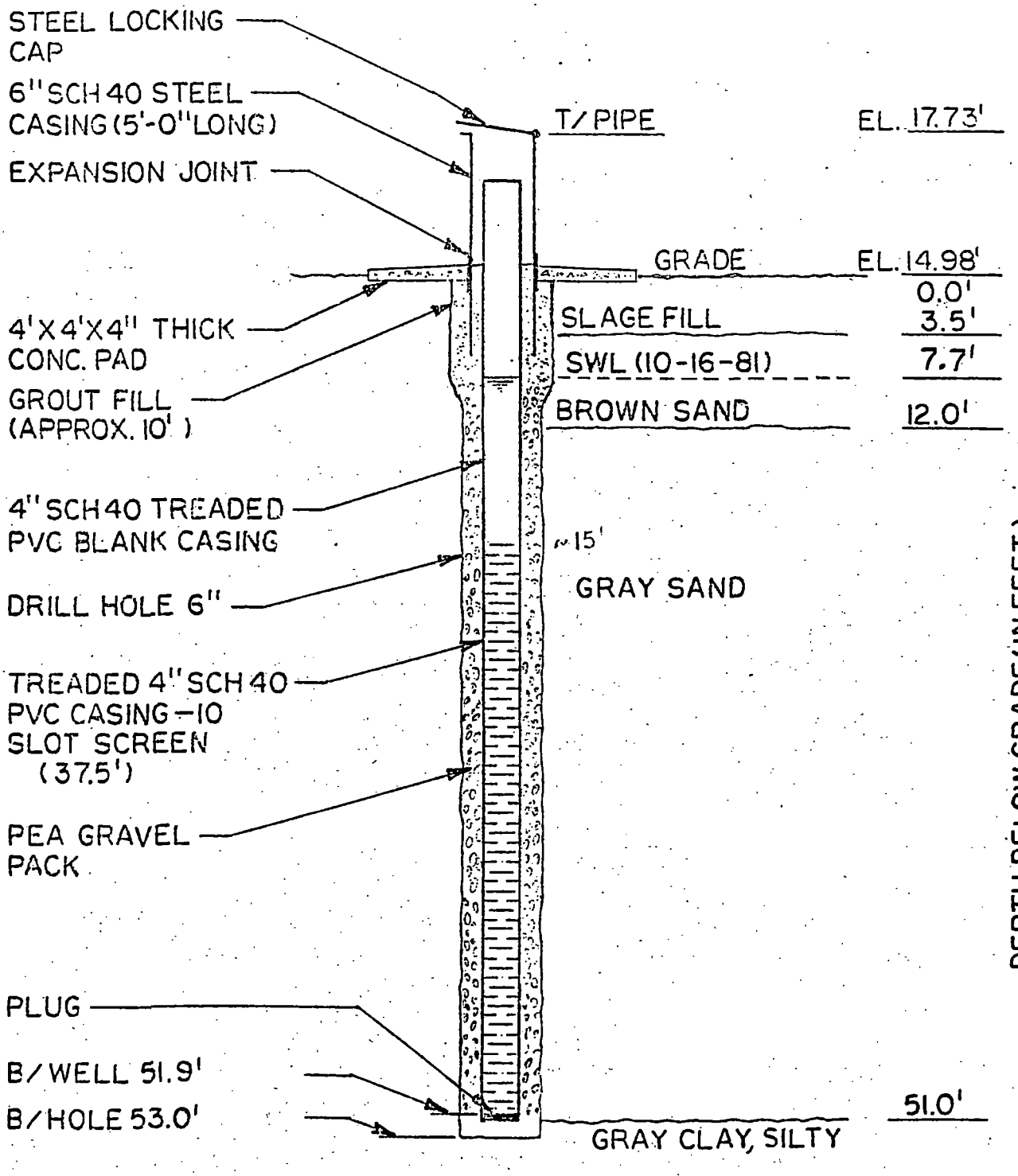
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWD-2-04

℄ WELL COORDINATES: S=1482.36' E=8296.59'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 9-17-81

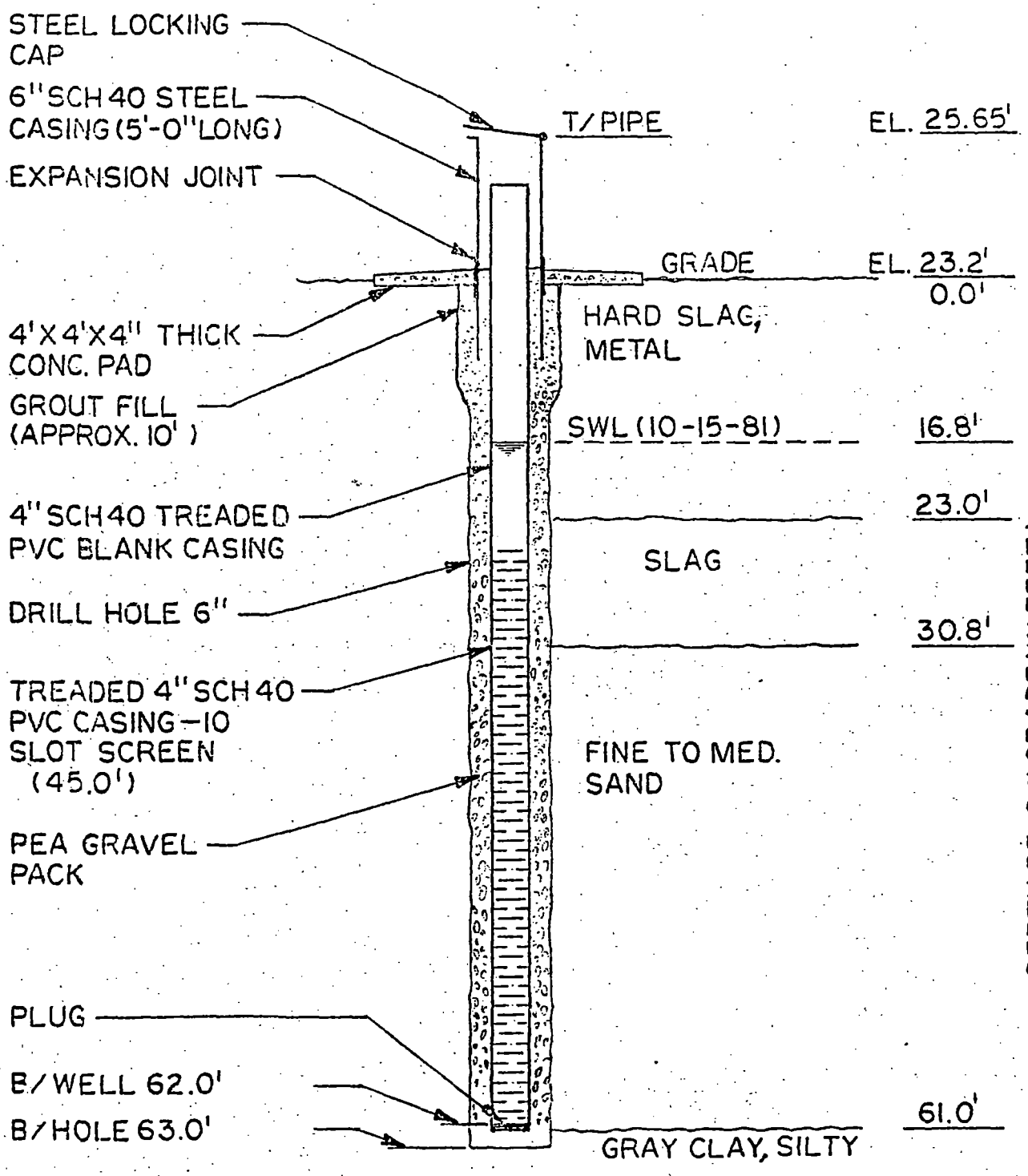
ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWT-2-01

℄ WELL COORDINATES: S-2219.64' W-6483.15'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 9-29-81

ES ENGINEERING-SCIENCE



MONITORING WELL COMPLETION DIAGRAM
US STEEL - GARY WORKS
HWT-2-02

℄ WELL COORDINATES: S-1152.09' W-7169.75'
(USS-GARY WORKS GRID SYSTEM)
DATE WELL COMPLETED: 10-1-81